Aleš Klégr and Jan Čermák

Neologisms of the ›On-the-pattern-of‹ Type: Analogy as a Word-formation Process?

> The analogy so pleased him that he often used it in conversation with friends, and his formulation grew increasingly precise and elegant.
>
> Milan Kundera, *The Unbearable Lightness of Being*

1.   Starting-points

Analogy has been of profound interest to scholars since classical antiquity. In language study it is a well-known and universally acknowledged factor in shaping language and its development, which has been examined from both a diachronic and synchronic perspective. It is traditionally associated with change in morphonology, morphology, and syntax (where analogy forms the basis of rule reinterpretation). It has been discussed in the pre-structuralist era, as in Junggrammatiker Paul's *Prinzipien der Sprachgeschichte* (1880, chapter 5), by structuralists – de Saussure devotes two chapters to it in the third part on diachronic linguistics of his *Cours* (1916), Trnka explores this subject in his paper *About Analogy in Structural Linguistics* (1936/1982) – as well as by generativists (Aronoff –Fudeman, 2004, 87 – 8). An oft-quoted account is provided by Hock (1986/1991, 167 – 237). He distinguishes two main types of analogy (apart from analogy as a factor in sound change): analogical levelling (›paradigmatic‹ levelling), or the reduction or elimination of morphophonemic alternation within a morphological paradigm, and proportional analogy, in which a regularity is carried over to irregular forms according to the formula A:A' = B:X. He mentions three areas in which proportional analogy operates, morphology, orthography and word formation, i.e. creation of neologisms (*xeroxing*), which is of primary importance to us here. According to Hock, proportional analogy may also combine with morphological reanalysis as in *Hamburger* where ›from Hamburg‹ was reanalyzed as ›from ham‹, thus making way for analogized forms such as *cheeseburger, turkey burger.*

While individual examples like *hamburger* > *cheeseburger* are clearly indicative of analogy at work, it is difficult to get a full idea of analogy at work on the basis of a few scattered instances. The present study makes use of the op-

portunity provided by electronic dictionaries to search through the etymology section of entry articles. It so happens that if an electronic dictionary such as the COD carefully and consistently enough describes the etymology of the head-words, a relatively large sample of what the compilers apparently consider analogized creations can be gathered.

Also there seems to be a certain disparity between this relatively large number of neologisms whose origin is ascribed to analogy and the fact that authors of standard descriptions of contemporary English word-formation, such as Bauer (1983) and Plag (2002), give only a passing mention to its role in vocabulary expansion in English. Therefore we decided to examine the copious electronic dictionary data to see whether it could throw up some new aspects of analogy and show some other patterns beyond the much quoted example of *cheeseburger* on the model of *hamburger*.

2.   Data Sources and Reference Sample

The results of a full text search in electronic/online dictionaries for words whose origin involves analogy depend on how systematic the marking is. In the *OED Online* there are 858 hits for words whose etymologies include the term ›analogy‹. A cursory look shows however that not always does it apply to the actual etymology of the word in question. What is more, the compilers often use other words instead of and alongside the term analogy and so it is necessary to make a careful analysis to identify formulations referring to analogical formations.

Inasmuch as the study is of a preliminary nature, it seemed suitable to have a look at dictionaries with a more synchronic orientation than the *OED*, namely the *COD* and the *RHWUEL*. In the case of the *COD* full text search in the etymology block for the string *on the pattern of* (in several instances also *by analogy with*, *on (the) analogy with* or *on the model of*) yields close to 350 hits in both the *COD9* (1995) and the *COD10* (2001). Similarly one finds in the *RHWUEL* (1996) a total of 194 instances with *on the model of* etymology and 68 containing *by analogy with*.

Eventually, the choice went to the *COD9* list comprised of 344 items (see Appendix) of presumably analogized creations (i.e. regarded as such by the compilers). In the following text we also refer to several other examples taken from other sources. Needless to say that the *COD9* list represents only a tentative sample which is neither complete (for instance *cheeseburger* is missing in both the *COD9* and the *COD10* since the respective entries do not give etymology) nor reliable as it is bound to include a certain amount of dubious or incongruous cases. This is principally due to the fact that analogy represents, for various

reasons, a process still open to much debate and so establishing a correct etymology in such cases is not an easy matter.

3.   Sample Analysis

Leaving aside the issue of the status of analogy among word-formation processes (WFPs), we searched the sample for recurrent patterns and ways whereby the etymologies of the sample items could be described. The preliminary picture which emerges is far more varied and complex than we expected. First and foremost, it appears that most instances in the sample can be related to standard WFPs and accordingly fall into several distinct groups of presumably analogical formations (with some additions from elsewhere). The resultant preliminary classification is as follows:

1. the **derivational** type: *implode < explode, introjection < projection, oldster < youngster, tactile > audile* (affixal formations by analogy);
2. the **compound** type: *airhead < bridgehead, mouse potato < couch potato*;
3. the (combining-form) **neoclassical compound** type: *democrat < aristocrat, astronaut < aeronaut, cacography < orthography*;
4. the **particle compound** type: (military) *build-down < build-up; hands-on < hands-off*;
5. the **conversion** type (often connected with alternation): *ascent < ascend* (based on *descent < descend*);
6. the **blending** type: *sordor < squalor, walkathon < marathon*; cf. Stein's ›layering‹ exemplified by *numerati, jazzerati* on the pattern of *literati*;
7. the **clipping** (abbreviation) type: *Nazi < Sozi(alist)*;
8. the **acronym** type: *SNOBOL < COBOL, H-hour < D-day*;
9. the **calque** type: **lexical:** *nonsuch < Fr. nonpareil; abreact < Ger. abreagieren*; **semantic:** *sack* (*plunder* – from Fr. *sac,* in the phrase *mettre à sac* ›put to sack‹, on the model of Ital. *fare il sacco, mettere a sacco,* which perhaps originally referred to filling a sack with plunder);
10. the **multiword formation** type: *perpetuum mobile < primum mobile*;
11. **other types** of analogized formations going beyond the above processes: **root creation**, involving a fanciful element not found elsewhere (*million, billion > jillion, zillion*); presumably analogical formation of **bound morphemes, affixes and combining-forms** (*-ose, yocto-, zepto-*).

It was somewhat surprising to find that for practically every type of WFP there is a parallel analogical formation. Surprising only because examples of analogized

formations in the literature are chosen selectively and randomly; at least we have not come across any attempt to give their whole range. From the above classification we may conclude that regardless of whether a WFP is considered morphological, highly systematic and rule-governed (derivation, compounding) or highly idiosyncratic and arbitrary (clipping, acronymy) each is accompanied by analogical coinages. To quote Szymanek (2005, 431), »[g]enerally speaking, regardless of the strength and productivity of a particular pattern, a new complex word may be created by analogy«.

3.1.   Some Remarks on the Sample Features

The bulk of our sample comes from two registers – scientific/technical and colloquial/slang, with a marked preponderance of the former. This finding confirms a general tendency in word-formation that the process of conceptual production and exchange is particularly active and brisk in the scientific and professional communities on the one hand and in various interest groups thriving on fashionable trends on the other hand. This onomasiological need is particularly strong in nouns and adjectives which comprise the majority of the sample.

From the etymological point of view, the sample contains both native, foreign and hybrid creations. The items of the scientific/technical layer prevail, which accounts for the fact that a large number of the analogized creations is based on Latin and Greek lexical material. In several cases of this type, it is very difficult to decide whether a particular lexical item arose through analogy with another learned word by combination of borrowed segments on the English soil, or whether the word had been borrowed into English as a whole (e.g. *sorority* formed on the model of *fraternity*). (The latter possibility would exclude such items from the list of native analogized creations.) The dating of most items in our sample falls between the 17th and 20th centuries, with a few exceptions of undoubted Middle English origin.

On the whole, our analysis of the sample has revealed that in most cases analogy indeed played a crucial formative role and that its operation was rather more patterned than unpredictable. From a broader structural and typological perspective, this patterning by analogy in relatively recent English can be seen as part of its striving for a greater degree of transparency (regularity) in the structure of the word, presumably in response to its being inundated by lexical items of specialized meaning and opaque form. The isolated (or secreted) formatives are then free to be used in the lexicogenic process (if they are not a direct result of its operation: *yocto-*, *zepto-*).

3.2.   A Case Example of Analogical Creation

As a case example we may use the formation *anklet*, meaning ›an ornament worn around the ankle‹ and first attested in English, according to the *OED*, as used by P.B. Shelley in 1819. It is described by lexicographers as patterned on *bracelet* as the model word. The analogy seems then to be of the immediate kind and motivated semantically: both *anklet* and *bracelet* refer to items of jewellery. The patterning, however, may be more deeply structured than meets the eye. Though immediate analogies tend to be also non-proportional, what we have here is a case where the relationships are of proportional nature and semantic motivation appears to be paired with a phonetic one. The process begins, as proportional analogy always does, with an isolation of the component parts. They can be decomposed, as is the case here, in an etymologically unorthodox way: the formative *–let* in the model word is isolated so that one diminutive suffix (*-et*) is superseded by another (*-let*). This ahistorical replacement is facilitated by the fact that there exist semantic parallels between Middle English nouns *bracel* and *brace* which allow the mistaken joining of the final base consonant to the suffix. Another potent factor to facilitate such morphological reanalysis is phonetic resemblance which often plays havoc with morphology in analogical creations (cf. distinct sound patterns in such formations as *aviculture, apiculture, arboriculture*, formed on the pattern of *agriculture*; *Mariolatry* on the pattern of *idolatry*). In the meantime, another proportional analogy seems to be at work in the lexical item that feeds the formation of *anklet* from the other direction: *ankle* appears to be decomposed into **ank-* and *–le* on the pattern of some such pair as *handle* and *hand* (i.e. *ankle : X (= ank) = handle : hand*).

4.   Analogy – a Distinct Word-formation Process?

Before we attempt to formulate some general impressions from the sample analysis, it will be useful to review the predominant positions on analogy in literature. Authors seem to agree that analogy comes in two forms, as one-off formations modelled on a particular lexeme and cases when a single lexeme provides a pattern for a series of analogical formations. While they usually agree that the former are ›genuine‹ analogical formations, isolated, not accounted for by any kind of rule, unpredictable to some degree, the latter type poses certain problems. Thus Bauer (1983, 96) defines ›genuine‹ analogy as follows: »By an analogical formation will be meant a new formation clearly modelled on one already existing lexeme, and not giving rise to a productive series«, drawing on the distinction between productivity and analogy made by Thomson (1975, 347). At the same time he admits the possibility that »an analogical formation

will provide the impetus for a series of formations …« and resolves this awkward fact by claiming that generating a series of words is not the same as generalization: »If instances of word-formation arise by analogy then there is in principle no regularity involved, and each new word is produced without reference to generalizations provided by sets of other words with similar bases or the same affixes: a single existing word can provide a pattern, but there is no generalization« (Bauer 1983, 294).

Plag (2002, 37 – 38), on the other hand, recognizes that »[i]n such cases, the dividing line between analogical patterns and word-formation rules is hard to draw. In fact, if we look at rules we could even argue that analogical relations hold for words that are coined on the basis of rules« and he mentions Becker (1990) and Skousen (1995), who »have developed theories that abandon the concept of rule entirely and replace it by the notion of analogy. In other words, it is claimed that there are not morphological rules, but there are analogies across larger or smaller sets of words«. At the same time he provides counterarguments to such a position: »it is unclear how the systematic structural restrictions emerge that are characteristic of derivational processes« and »why certain analogies are often made while others are never made« (ibid.). He concludes by advocating to »stick to the traditional idea of word-formation rules and to the traditional idea of analogy as a local mechanism« or, as he puts it elsewhere (Plag 1999, 20), »analogical formations should be distinguished from instantiations of productive word formation rules«. Still, the dilemma remains and one is inclined to agree with Szymanek (2005, 431) that »it does not seem possible or appropriate to dissociate completely both concepts, i. e. analogy and (high) productivity«.

5.   Analogy as Emerging from the Sample

In general terms, then, analogy found in our sample appears to be linked to meaning and operate in morphologically analyzable word-structures. We found it useful to modify the basic proportional analogy formula A : A' :: B : X for the purposes of word-formation to accommodate the internal structure constituents of A and B. The item A is seen as composed of constituents M1 and M2, and B is composed of constituents M1 and MX (or MX and M2), where M^1 stands for ›first or initial morpheme‹ and M^2 for ›second or final morpheme‹. The resultant formula is

$$A\ (M^1\ M^2) :: B\ (M^1: M^X\ \text{or}\ M^X: M^2)$$

where M^X stands for a morpheme substituting either morpheme M^1 or M^2 and the formula basically says that on the basis of the internal structure of a par-

ticular word A a new word B is formed by replacing one of the constituents with a similar morpheme/word-structure.

In most cases, analogy tends to be fostered by concomitant functional factors (semantic content). The substituting constituent (free or bound morpheme) appears to be semantically related to the substituted one by various kinds of sense relations such as opposition (*explode-implode*, *patriach-matriarch*) or co-hyponymy (*run-walk* in *walkathon – marathon*). Sometimes, however, the primary motivating impulse appears to be a formal one (most notably, identical phonetic sequence; cf. e. g., the formations in *–nik*).

As might be expected the sample findings confirm the existence of analogy at two levels, **local analogy** (›the traditional idea of analogy as a local mechanism‹) and **extended analogy** providing a pattern for a series of formations. It has to be said that on the most general level all word-formation – whether rule-based (and predictable) or irregular (such as clipping) and one-off coinages – has some kind of analogy as its underlying principle. Analogy is the backbone of creativity, i. e. the native speaker's ability to extend the language system in a motivated but unpredictable (non-rule governed) way which may or may not subsequently become rule-governed, predictable and productive. Incidentally, it is not without interest that, as Lyons (1969, 36 – 8) says, »whereas the traditional grammarian regarded ›analogy‹ as the principle of regularity in language, the comparative philologist of the late nineteenth century tended to look upon it as one of the main factors which inhibited the ›regular‹ development of language« and concludes that »even the irregularities in language may originate from what were once regularities, however paradoxical this may seem.«

The fact that most, if not all, items in our sample can be referred to one type of standard WFP or another suggests that they do <u>not</u> represent a distinct, separate formal (structural) type. By the same token, they were not singled out by the *COD* authors by accident; there is something special about them which prevents their origin from being described in terms of a WFP. The appearance of all of them is in fact claimed to have been ›inspired‹ or ›motivated‹ by some other specific ›source‹ word, i. e. their formation was triggered by a concrete lexical item on which they are directly patterned. All this applies to both local and extended types of analogy. It leads us to the conclusion that analogy is indeed not a distinct formal word-formation type, but rather a motivated way of exploiting all kinds of word-formation processes, whether unpredictable or rule-governed, to fill some immediate need. Motivation here includes all three types of motivation, phonetic, morphological and semantic, as pointed out by Ullmann (1966). In this sense analogy superimposes different types of word-formation and freely uses them as a vehicle »to say things which had not been said before« (Lyons 1969, 38).

A case in point is *ankylose* which *COD9* explicitly describes as a back-for-

mation from *ankylosis*, on the pattern of *anastomose*, or *metonym* as a back-formation from *metonymy*, on the pattern of *synonym*, etc. It goes without saying that there is no clear-cut division between the two forms of analogy, local and extended: inevitably it will often be difficult to say whether a neologism came into being solely by exploiting the general pattern of a particular word-formation process (such as compounding) without reference to any previously existing word or whether it was formed directly by analogy with it. Again, this is reminiscent of Plag's note that »the dividing line between analogical patterns and word-formation rules is hard to draw« (Plag 2002, 37).

6.   Features Characterising Analogical Formations in the Sample

The analogical formations in the sample display certain characteristics that make the presence of analogy notable and accordingly remarked on by the etymologists. They seem to apply particularly to instances of local analogy in which the operation of analogy is signalled by at least **four related features**, not commonly found with ›regular‹ cases of the respective word-formation processes.

The first one is (1) **irregularity** or unpredictability. The element *ank-* in *anklet* mentioned above is a case in point, despite all the structural proportionality that might perhaps be traced underneath. Analogized neologism occurs even when one or the other or both constituents of the complex source word are not regular, or do not appear to be word-forms, affixes or combining forms at all. For instance, although there is a distinct set comprising *million, billion, trillion, zillion*, no affix/combining form *-illion* has so far been recognized, and similarly neither *mi-* in *million* nor *z-* in *zillion* are morphemes either. They are treated as such due to (ad hoc) (2) **reanalysis.** In the case of *million*, it is reanalyzed as if composed of *–illion* affix/combining form; in the case of *doublet*, it is the part *–let* which is treated in a likewise manner, etc. Next, there is (3) a distinct **semantic link** between the trigger or pattern-providing word and the neologism (typically opposition, co-hyponymy, synonymy). This inevitably results in the final feature: neologisms produced ›on the pattern of‹ typically form (4) **lexical fields** of various types around the pattern word (cf. the field patterned on *agriculture* containing as many as 19 formations (see Table 1).

Table 1 Examples of analogy-based lexical fields

Trigger word	**Agriculture**	**M1 -*fly***
Lexical field(s)	aeroculture, apiculture, aquaculture, aquiculture, arboriculture, aviculture, citriculture, floriculture, horticulture, mariculture, olericulture, pisciculture, sericulture, silviculture, stirpiculture, sylviculture, vermiculture, viniculture, viticulture	(**habitat/place of origin**) *house-, bar-, alder-, stone-, stable-, Spanish-, Hessian-;* (**time of incidence**) *May-, March-, harvest-;* (**feeding source**) *cheese-, dung-, flesh-, fruit-, meat-, flower, vinegar-;* (**host**) *deer-, horse-;* (**colour**) *butter-, green-, black-,white-;* (**appearance**) *crane-, scorpion-, saw-, spider-, soldier-;* (**distinctive feature**) *hover-, fire-, lantern-, warble-;* (**behaviour**) *gad-, cluster-, dragon-, rob-, etc.*

There is one other aspect which distinguishes local analogy from productive processes in the sample. Whereas the latter may not need any trigger word and operate mainly on morphological basis, local analogy yields formations closely linked to the trigger word (and together) within a lexical field by formal and functional similarities. The field is composed of two and more items and most typically based on semantic relationships of antonymy and co-hyponymy. The analogical creation in fact serves to fill the gap(s) in a lexical (sub)field opened up by the trigger word.

7. Conclusions

Although there is no doubt about the importance of analogy in lexical word-formation – indeed there is a theory recognising three ways in which speakers arrive at a word they are looking for: by rote (searching the mental lexicon for a memorized word), by rule (productive WFPs) and by analogy (Aronoff, Fudeman, 2004) – we are not aware of any in-depth study that would deal explicitly with the operation of analogy in the creation of new words.

The sample culled from the etymology blocks of the electronic *COD9* displays distinct distributional characteristics, stylistic and temporal, but more importantly the analysis of the sample has shown that the presumed analogical formations recall all the major word-formation processes, and accordingly can be assigned to several groups or types: the derivational type, the compound type, the conversion type, the blending type, etc., with a specific distribution. This close interrelation between analogy and WFPs argues for the view that analogical coinage is not an independent and separate process, but instead a motivated exploitation of all types of word-formation processes, whether rule-

governed or not. If true, then analogy should come under the heading of motivation, encompassing all three types of motivation.

Analogical formations in the sample display certain characteristic features, most of them well-known, that make the presence/operation of analogy notable (hence it is pointed out by the dictionary etymologists). These features include irregularity (unpredictability), reanalysis, close semantic link between the trigger word and the neologism, and lexical field membership.

To conclude, the sample analysis has confirmed the erratic nature of analogy which poses a serious methodological problem as analogical formations are likely to form a cline from idiosyncratic one-off creations to relatively open-ended series. On the other hand, through analogical change as recorded for us by lexicographers we learn something of the morphological segmentation and functional interpretation of the forms at the time when the change was taking place. By assessing its agency, we may hope to contribute a little towards our understanding of mechanisms that allow the native speaker of a language to form new lexical items in a synchronic ›grammar.‹

Acknowledgements

References:

Aronoff, Mark, Kirsten Fudeman (2004) *What is Morphology?* Malden, MA: Wiley-Blackwell.

Adams, Valerie (1973) An Introduction to Modern English Word-Formation, London: Longman.

Bauer, Laurie (1983) *English Word-formation*, Cambridge, UK: Cambridge University Press.

Becker, Thomas (1990) *Analogie und morphologische Theorie*, Munich: Wilhelm Fink.

Hock, Hans Heinrich (1986, 1991) *Principles of Historical Linguistics*, Berlin: Mouton de Gruyter.

Klégr, Aleš, Jan Čermák (2006) »Onomasiological Cycle: Up the Down Staircase,« *Prague Studies in English* XXIV, Charles University in Prague, Karolinum Press, 7 – 18.

Lyons, John (1969) *Introduction to Theoretical Linguistics*, Cambridge, UK: Cambridge University Press.

Paul, Hermann (1880) *Prinzipien der Sprachgeschichte*, Halle (9th ed. Niemeyer: Tübingen, 1975).

Plag, Ingo (1999) Morphological Productivity. Structural Constraints in English Derivation, Berlin-New York: Mouton de Gruyter.

Plag, Ingo (2002) *Word-Formation in English*, Cambridge, UK: Cambridge University Press.

Ross, James F. (1982) *Portraying Analogy*, Cambridge, UK: Cambridge University Press.

Saussure, Ferdinand de (1989, 1996) *Kurs obecné lingvistiky*, Praha: Odeon, Academia. [Cours de linguistique générale, ed. Bally, C. and A. Sechehaye, Paris, Payot, 1916]

Skousen, Royal (1995) »Analogy: a Non-rule Alternative to Neural Networks,« *Rivista di Linguistica* 7.2: 213 – 231.

Stein, Gabriele (2000) »Word-Formation Typology: Lexical Units, Processes and Models,« in Reitz, Bernhard and Sigrid Rieuwerts (eds) *Anglistentag 1999, Mainz. Proceedings*, Trier: Wissenschaftlicher Verlag, 91 – 101.

Szymanek, Bogdan (2005) »The Latest Trends In English Word-Formation,« in Štekauer, Pavol and Rochelle Lieber (eds) (2005) *Handbook of Word-Formation*, Dordrecht: Springer, 429 – 448.

Štekauer, Pavol, Rochelle Lieber (eds) (2005) *Handbook of Word-Formation*, Dordrecht: Springer.

Thomson, Sandra A. (1975) »On the Issue of Productivity in the Lexicon,« *Kritikon Litterarum* 4: 332 – 49.

Trnka, Bohumil (1936) »O analogii v strukturálním jazykozpytu,« *Slovo a slovesnost,* 2: 221 – 222. [translated as »About Analogy in Structural Linguistics,« in Fried, Vilém (ed.) (1982) Bohumil Trnka, *Selected Papers in Structural Linguistics*, Mouton, 29 – 31].

Trnka, Bohumil (1961) »O morfonologické analogii,« *Časopis pro moderní filologii* 43: 65 – 73. [translated as »About Morphonological Analogy,« in Fried, Vilém (ed.) (1982) Bohumil Trnka, *Selected Papers in Structural Linguistics*, Mouton, 1982, 263 – 275].

Trnka, Bohumil (1968) »On Analogy,« Zeitschrift für Phonetik, Sprachwissenschaft und Komunikationsforschung 21: 345 – 351.

Ullmann, Stephen (1966) »Semantic Universals,« in Greenberg, Joseph H. (ed.) *Universals of Language*, 2nd ed., Cambridge, MA: MIT Press.

Dictionaries:

Concise Oxford Dictionary [*COD9*], 9th Edition, 1995.
Concise Oxford Dictionary [*COD10*], 10th Edition, 2001.
Random House Webster's Unabridged Electronic Dictionary [*RHWUEL*], Version 2.0, 1996.

Appendix

Reference *COD9* sample of presumed analogical formations

actinide, adsorb, Africander, airhead, allergy, alumina, aluminium, ambivalence, ambivert, amylopsin, -ance, -ancy, -ane2, anglophone, anklet, ankylose, anticline, antipathetic, apiculture, apolune, apprentice, aquaculture, aquarium, arboriculture, arsine, ascent, astronaut, audile, auto-, average, aviculture, barquentine, barrister, baryta, beachhead, beatnik, beauteous, behaviour, benignant, biathlon, billionaire, bionic, bionomics, biopsy, bookmobile, boundary, bounteous, brazier2, Briticism, bumptious, cacography, Carolingian, casualty, catalyse, catalyst, centennial, -centric, cetane, chaotic, chordate/chordata, citron, clairaudience, cloudscape, cohesion, communitarian, computerate, croncrescence, condolatory, coolant, cosmonaut, covalent, curvilinear, custodian, decelerate, deman, democrat, detoxicate, diarchy, dignitary, dimer, diplomacy, disclosure, discography, discovery, dissimilate, distraint, doomster, duologue, duopoly, duplet, ebony, egocentric, elasstomer, electrolyse, electrostatic, electrovalent, empathy, equalitarian, ergosterol, eventual, eventuate, exposure, extrovert, exurb, exurbia, factual, ferroelectric, finery1, fissiparous, floriculture, flotation, fluorescence, fruitarian, genetic, Glaswegian, goodbye, gradient, grandiloquent, graphicacy, grebo, handicraft, heft, heliport, heptahedron, heptarchy, heptathlon, Hibernicism, horticulture, humidor, hydrofoil, hydropathy, hyperosnic, iconoclasm, idiocy, implode, Indonesian, infix, inlier, interactive, introjection, iodoform, LaserVision, leaderene, levitate, literacy, lithia, locative, -loger, lorikeet, lowlight, maleficent, manufactory, Mariolatry, meristem, Messianic, metonym, metronymic, -metry, midi, midibus, millenium, misandry, monandry, monomial, morning, morpheme, motorcade, multinomial, mycelium, narcolepsy, necropsy, neoprene, neptunium, nom de plume, nonagon, nucleonics, numerate, nylon, nymholepsy, oceanarium, octoroon, oldster, oligopoly, operatic, oracy, Orlon, -ose2, outro, pannikin, parenthetic, pellagra, penultimate, percept, perilune, perpetuum mobile, pessimism, petrifaction, phonon, phosphine, photon, pinocytosis, pisciculture, planetesimal, platitude, pleasurable, plication, -ploid, ploidy, plutonium, poetry, polynomial, potentiate, practice, preferential, privateer, proactive, proclitic, prosenchyma, prothalamium, providential, prudential, pulsar, puritan, pyrolyse, quadruplet, quadruplicity, quantum chromo-dynamics, quintuplet, quintuplicate, radionics, radon, raguly, recessive, reflate, reflation, repine, reportorial, resoluble, resorption, retortion, retractile, retrogress, retrogression, retroject, retrospect, rhombohedron, rudiment, salariat, sateen, saving, -scape, scarify2, Scillonian, sclerenchyma, secrecy, seductive, selvedge, sensor, septfoil, septillion, septuplet, sequential, seriatim, sexfoil, sextillion, sextuple, sextuplet, siderostat, signary, silica, silicon, simpleton, singlet, singleton, skewbald, SNOBOL, sonar, sorority, sousaphone, speciesism, spectacular, spokesman, squirearch, squirearchy, stabile, stator, statuesque, Sten gun, sthenic, straticulate, stratosphere, submissive, suitable, superordinate, surficial, surrebutter, sympathetic, syn-

aesthesia, synoecious, talkie, telegram, tellurium, -teria, terrarium, tetrathlon, titanium, titivate, tog2, toneme, transonic, travelogue, triathlon, trichotomy, tricrotic, trillion, trinomial, trio, triphibious, triplet, triptych, trousers, tyranno-saurus, ultimogeniture, undecagon, underwhelm, unipod, Unix, valediction, vanitory, vespiary, viaduct, vibratile, video, vivisection, volution, walkathon, warfarin, wealth, weeny, width, witticism, wondrous, yocto-, zepto-, zymurgy

Part 2
Beyond Language Structures